

## **REMARKS**

### **Status Of Application**

Claims 1-12 are pending in the application; this Amendment adds new claims 13-17. In the Office Action it is noted that claims 1-12 are rejected under 35 U.S.C. § 103(a).

### **35 U.S.C. § 103(a) Rejection**

Claims 1-12 presently stand rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,103,431 to Tamaoki et al ("Tamaoki") in view of U.S. Patent No. 6,524,759B1 to Sugimoto et al ("Sugimoto").

Tamaoki discloses an image-recording medium having a liquid crystal layer disposed between a pair of substrates. The liquid crystal layer includes a cholesteric liquid crystal compound and a photochromic compound. Tamaoki also discloses a method of forming an image on this image-recording medium where the liquid crystal layer is heated to its cholesteric liquid crystal phase and simultaneously irradiated with a light that causes the photochromic compound to react, thereby instigating a color change of the liquid crystal layer, and then rapidly cooling the liquid crystal layer to "fix" the color.

Sugimoto discloses an image-recording medium having a liquid crystal layer and a reversible light-absorbing layer. The reversible light-absorbing layer serves as a controllable background layer for the liquid crystal layer for absorbing some or all of the light passed by the liquid crystal layer. The liquid crystal layer includes a cholesteric liquid crystal material. Sugimoto also discloses a method of forming an image with the liquid crystal layer that is basically the same as that described above in relation to Tamaoki, except that Sugimoto does not disclose including a photochromic compound in the liquid crystal layer, so the Sugimoto method does not include irradiating light for reacting the photochromic compound as disclosed in Tamaoki. Thus, the proposed combination of Tamaoki and Sugimoto would result in a method of image formation

involving a step of heating the liquid crystal material and possibly irradiating a photochromic compound.

It is respectfully submitted that the present invention as defined by claims 1-12 patentably distinguishes Tamaoki in view of Sugimoto.

With regard to claims 1-9, claim 1 recites "**a first heating process** for heating the liquid crystal in a crystal phase to a first temperature that allows the liquid crystal to exhibit a cholesteric liquid crystal phase or an isotropic phase **to form an image**," and further recites "**a second heating** process for heating at least a part of an area of the recording medium containing at least **a part of an area where the image has been formed** to allow at least a part of the image **to discolor or develop a color**." Thus, image formation is completed according to claim 1 after at least two heating processes, one where an image initially takes form, and another where some modification related to image color takes place. This is in contrast to the method resulting from the proposed combination of Tamaoki and Sugimoto where an image is *formed* by a single heating process.

It is appreciated that, as pointed out in the present Office Action, it is known to erase an image through an independent process of heating the liquid crystal as disclosed by Sugimoto. However, the disclosure in the Sugimoto related to a process of heating for the purpose of erasing is not considered sufficient for rendering obvious a step that instead continues development or formation of an image. Thus, since both the first and second heating processes recited in claim 1 contribute to formation of a final image, there is no teaching in Tamaoki or Sugimoto that would reasonably lead to a combination of Tamaoki and Sugimoto that teaches an image formation method having more than a single heating process. Therefore, the proposed combination of Tamaoki and Sugimoto cannot render obvious claim 1, or claims 2-9 which depend, directly or indirectly, from claim 1.

With regard to claims 10-12, claim 10 recites "a first process for selectively setting portions of the liquid crystal in a crystal phase and a fixed phase and thus forming an

image on the thermo-sensible recording medium,” and further recites “a second process for discoloring or developing a color of at least a part of the portion(s) set in the fixed phase thus discoloring or developing a color of at least a part of the image.” Thus, image formation is completed according to claim 10 after at least two processes, one where an image initially takes form, and another where some modification related to image color takes place. Thus, claim 10, as well as claims 11 and 12 which depend from claim 10, is considered to be patentably distinct over the proposed combination of Tamaoki and Sugimoto for similar reasons to those discussed above in connection with claim 1.

Accordingly, it is respectfully requested that the rejection of claims 1-12 under 35 U.S.C. § 103(a) over Tamaoki in view of Sugimoto be reconsidered and withdrawn.

#### **New Claims**

New claims 13-17 have been added to provide a more adequate basis for protection of the invention. It is respectfully submitted that claim 13 recites similar features as claims 1 and 10, and therefore patentably distinguishes over Tamaoki in view of Sugimoto for at least the reasons discussed in connection with claims 1 and 10. With regard to claims 14-17, these claims depend, directly or indirectly, from claim 13 and therefore patentably distinguish over Tamaoki in view of Sugimoto for at least the same reason as claim 13.

#### **CONCLUSION**

In view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Amendment increases the number of independent claims by one from two to three, increases the total number of claims by five from twelve to seventeen, and presents no multiple dependency claims. Accordingly, no fee based on the number or type of

Application No. 10/081,699  
Amendment dated August 20, 2003  
Reply to Office Action of April 22, 2003

claims is currently due. However, if a fee, other than the issue fee, is due, please charge this fee to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any fee required for such Petition for Extension of Time, and any other fee required by this document, other than the issue fee, and not submitted herewith, should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

By: 

Brian E. Harris  
Registration No. 48,383  
Agent for Applicant

BEH:pm:jkk:bar  
SIDLEY AUSTIN BROWN & WOOD LLP  
717 N. Harwood, Suite 3400  
Dallas, Texas 75201  
Direct: (214) 981-3461  
Main: (214) 981-3300  
Facsimile: (214) 981-3400  
August 20, 2003

DA1 263282v4